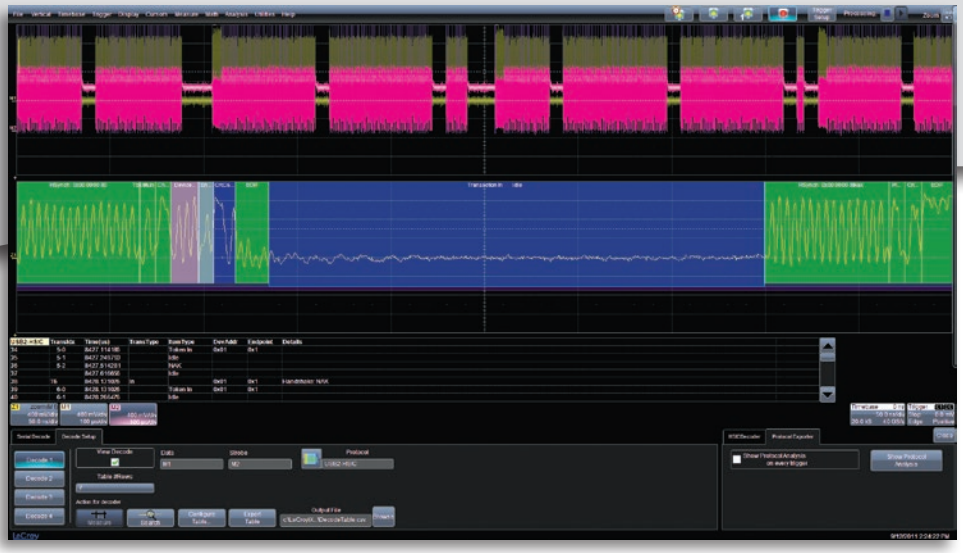
TELEDYNE LECROY
Everywhereyoulook™

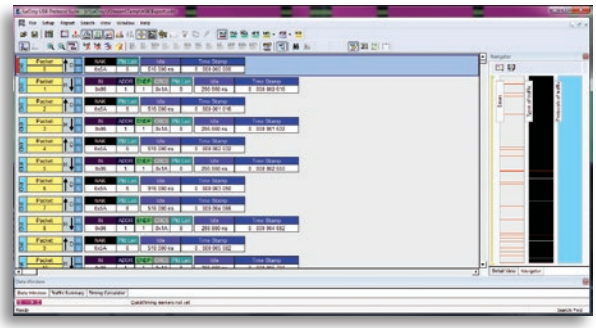
USB 2.0 HSIC Link and Data Layer Protocol Decode



The comprehensive and intuitive decode and easy to navigate table display enable a powerful tool set to quickly debug a USB2-HSIC powered system.

Key Features

- **Decodes High-speed (480 Mb/s) USB2-HSIC bus speed**
- **Correlate analog waveforms with protocol decode on one screen**
- **Decode information expands as the timebase is adjusted or zoomed**
- **Convenient table display with quick "Zoom to byte" capability**
- **Quick search capability for specific message packets**



Optional CATC® view helps look at HSIC traffic at transaction level.

Decode Annotation Complements Physical Layer Views

The USB 2.0 HSIC link and data layer decode information is annotated on the physical layer waveform. Various sections of the protocol are color coded to make it easy to isolate various opcodes and frames. Decode annotation information condenses or expands depending on the timebase/ zoom ratio setting.

HSIC decode annotation helps in isolating problems that cannot be completely attributed to physical layer issues. The Data and Strobe Offset setting on the oscilloscope menu enables the user to identify the correct level for which the receiving end will be able to understand the traffic. Protosync (separate option) takes the HSIC decode annotation to an even higher level by displaying the USB transaction in the CATC® protocol view on the scope screen or on a separate monitor.

With Physical Layer waveforms, USB 2.0 HSIC decode annotation and Protosync, the test engineer has the ability to view the entire hierarchy of the USB 2.0 HSIC traffic in a single instrument, a unique feature unmatched in the industry.

Convenient Table Display and Search

Long oscilloscope acquisition memory provides long capture times of USB 2.0 HSIC traffic. Any of the USB 2.0 packets, events or errors can be searched for on this decoded trace. In addition, the table data may be exported as a .csv file

Support on Multiple Oscilloscope Platforms

The USB 2.0 HSIC decode option is available on a wide range of oscilloscope models with real-time bandwidths from 1 GHz to 45 GHz.

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SPECIFICATIONS AND ORDERING INFORMATION

	USB2 HSIC bus D
	Definition
Protocol Setup	Selection for source channels.
	Decode Capability
Format	HSIC Link and Data Layer Protocol Decode (Hexadecimal or Binary).
Decode Setup	Selection for source inputs. Choose to Decode address values including/not including the R/W bit in address value.
Decode Input	Any analog Channel, Memory or Math trace.
# of Decode Waveforms	Up to 4 buses may be decoded at one time. In addition, zooms can be displayed (with decoded information).
Location	Overlaid on HSIC physical layer waveform, on Grid.
Visual Aid	Color coding for packets, bus conditions, Device Address, Endpoint and CRC fields. Decode information is intelligently annotated based on timebase setting.
	Search Capability
Pattern Search	**Events:** Any, Idle, Connect, Resume, Reset, Suspend, Unknown **Packet:** Any Toket Packets, Any Data Packets, any Handshake Packets, Token Out, Token In, Setup, SOF, Data0, Data1, Data2, Mdata, ACK, NAK, Stall, Nyet, ERR,Ping, Unknown Packet **Transaction:** Any, Trans In, Trans Out, Trans Setup, Trans Ping **Protocol Error:** Any, CRC5 Error, CRC16 Error, Bit Stuff Error, PID and Check Mismatch Error, Invalid PID Error, Packet Length Error, EOP Length Error , Frame Length Error
	Other
Compatible With...	Fully compatible with WaveRunner® 6 Zi Series; WaveSurfer® Xs/Xs-B Series; WaveRunner® Xi/Xi-A, 6000 Series; WavePro® 7 Zi/Zi-A, 7000 Series; WaveMaster® 8 Zi/Zi-A, 8000 Series; LabMaster 9Zi-A Series. Bandwidth of oscilloscope must be equal to bit rate with a minimum oscilloscope sample rate of 4x the bit rate.

Ordering Information

USB2-HSIC Decode Options

Product Description	Product Code
USB2-HSIC Decode Option for WaveSurfer Xs/Xs-B	WSXs-USB2-HSICbus D
USB2-HSIC Decode Option for HDO4000	HDO4K-USB2-HSICBus D
USB2-HSIC Decode Option for WaveRunner Xi/Xi-A	WRXi-USB2-HSICbus D
USB2-HSIC Decode Option for WaveRunner 6 Zi	WR6Zi-USB2-HSICbus D
USB2-HSIC Decode Option for HDO6000	HDO6K-USB2-HSICBUS D
USB2-HSIC Decode Option for WavePro 7 Zi/Zi-A	WPZi-USB2-HSICbus D
USB2-HSIC Decode Option for WaveMaster 8 Zi-A	WM8Zi-USB2-HSICbus D
USB2-HSIC Decode Option for LabMaster 9 Zi-A	LM9Zi-USB2-HSICbus D

Additional Products

Product Description	Product Code
Decode Annotation and Protocol Analyzer Synchronization Software Option for WaveRunner 6 Zi	WR6Zi-Protosync
Decode Annotation and Protocol Analyzer Synchronization Software Option for WaveRunner Xi/Xi-A	WRXi-Protosync
Decode Annotation and Protocol Analyzer Synchronization Software Option for WavePro 7 Zi/Zi-A	WPZi-Protosync
Decode Annotation and Protocol Analyzer Synchronization Software Option for WaveMaster 8 Zi/Zi-A	WM8Zi-Protosync

Additional Products (cont'd)

Product Description	Product Code
Decode Annotation and Protocol Analyzer Synchronization Software Option for LabMaster 9Zi-A	LM9Zi-Protosync

Recommended Accessories

1.0 GHz, 0.9 pF, 1 MΩ Active Voltage Probe	ZS1000
1.5 GHz, 0.9 pF, 1 MΩ Active Voltage Probe	ZS1500
2.5 GHz, 0.9 pF, 1 MΩ Active Voltage Probe	ZS2500
1.0 GHz, 0.9 pF, 1 MΩ Active Voltage Probe (Set of 4)	ZS1000-QUADPAK
1.5 GHz, 0.9 pF, 1 MΩ Active Voltage Probe (Set of 4)	ZS1500-QUADPAK
2.5 GHz, 0.9 pF, 1 MΩ Active Voltage Probe (Set of 4)	ZS2500-QUADPAK

Customer Service

Teledyne LeCroy oscilloscopes and probes are designed, built, and tested to ensure high reliability. In the unlikely event you experience difficulties, our digital oscilloscopes are fully warranted for three years and our probes are warranted for one year.

This warranty includes:

- No charge for return shipping
- Long-term 7-year support
- Upgrade to latest software at no charge

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